

Docket No. 10004809-1
Application No. 10/783,610

21

VIII. CLAIMS APPENDIX

1. (previously presented) A durable printed composite material, comprising:
 - a) a printable layer having a viewing surface and a printed surface, wherein an image is printed on the printed surface, said printable layer comprising a transparent or translucent material, said printable layer including an ink-receiving layer;
 - b) a metallic layer having an inner surface and an outer surface, said inner surface of said metallic layer providing a reflective sheen background, said reflective sheen background being visible through at least a portion of said printable layer; and
 - c) an adhesive layer adhered between the inner surface and the printed surface such that at least a portion of said metallic layer is visible through the printable layer wherein at least one of the layers includes an additive configured for one of light stabilization, liquid resistance, or vapor resistance.
2. (original) The material of claim 1, wherein said metallic layer comprises a reflective metal selected from the group consisting of aluminum, silver, indium, zinc, chromium, nickel, gallium, cadmium, palladium, molybdenum, gold, copper, rhodium, niobium and composites or alloys thereof.
3. (original) The material of claim 2, wherein said metallic layer comprises aluminum.
4. (original) The material of claim 1, wherein said metallic layer further comprises a colorant.
5. (original) The material of claim 1, wherein said metallic layer is a metal foil having a thickness of from about 0.01 μm to about 5 μm .
6. (cancelled).
7. (original) The material of claim 1, wherein the printable layer is transparent.

Docket No. 10004809-1
Application No. 10/783,610

22

8. (original) The material of claim 7, wherein the printable layer is polyethylene terephthalate.

9. (original) The material of claim 1, further comprising a protective layer bonded to the outer surface of the metallic layer.

10. (original) The material of claim 9, wherein the protective layer comprises a polymer selected from the group consisting of acrylic, epoxy, and mixtures thereof.

11. (original) The material of claim 9, wherein the protective layer has a thickness of from about 0.5 μm to about 100 μm .

12. (original) The material of claim 1, wherein the durable printed composite material has a thickness of from about 50 μm to about 250 μm .

13. (original) The material of claim 1, wherein the durable printed composite material is flexible.

14. (previously presented) A durable printed flexible composite material, comprising:

a) a printable layer having a viewing surface and a printed surface, wherein an image is printed on the printed surface, said printable layer comprising a transparent or translucent material;

b) a metallic foil layer having an inner surface and an outer surface, said inner surface of said metallic foil layer providing a reflective sheen background, said reflective sheen background being visible through at least a portion of said printable layer;

c) an adhesive layer adhered between the inner surface and the printed surface;

and

d) a protective layer adhered to the outer surface of the metallic layer;

wherein the durable printed composite material has a thickness of from about 50 μm to about 250 μm .

Docket No. 10004809-1
Application No. 10/783,610

23

15. (withdrawn) A method of forming a durable printed composite material, comprising steps of:

- a) reverse printing an image on a printable layer to form a printed surface, said printable layer comprising a transparent or translucent material;
 - b) providing a metallic layer having an inner surface and an outer surface;
 - c) adhering the printed surface to the inner surface of the metallic layer;
- and
- d) applying heat and pressure to the metallic layer,
- wherein said inner surface of the metallic layer is at least partially visible through the printable layer.

16. (withdrawn) The method of claim 15, wherein the step of reverse printing is accomplished by a printing technique selected from the group consisting of ink-jet, laser, electrostatic, offset, gravure, and liquid electrophotography.

17. (withdrawn) The method of claim 16, wherein the step of reverse printing is accomplished by ink-jet or laser printing.

18. (withdrawn) The method of claim 15, wherein heat and pressure is applied using a heated roller.

19. (withdrawn) The method of claim 15, wherein the metallic layer is a metal foil comprising a metal selected from the group consisting of aluminum, silver, indium, zinc, chromium, nickel, gallium, cadmium, palladium, molybdenum, gold, copper, rhodium, niobium and composites or alloys thereof.

20. (withdrawn) The method of claim 19, wherein the metal foil is aluminum.

21. (withdrawn) The method of claim 15, wherein the metallic layer further comprises a colorant.

Docket No. 10004809-1
Application No. 10/783,610

24

22. (withdrawn) The method of claim 15, wherein the printable layer is transparent.
23. (withdrawn) The method of claim 15, further comprising a protective layer bonded to the outer surface of the metallic layer.
24. (withdrawn) A system for forming a durable printed composite material, comprising:
- a) a printable layer comprising a transparent or translucent material, said printable layer including a printable surface configured for receiving a printed image; and
 - b) a reflective metallic layer having an inner surface and an outer surface, said inner surface being configured for adhering to the printable surface.
25. (withdrawn) The system of claim 24, further comprising a printer configured for reverse printing an image on the printable surface.
26. (withdrawn) The system of claim 25, further comprising a contacting mechanism configured for receiving said printable layer and said reflective metallic layer and applying heat and pressure sufficient to adhere the inner surface of the reflective metallic layer to the printable surface of the printable layer.
27. (withdrawn) The system of claim 26, wherein the printer and contacting mechanism are integrated as a single unit.
28. (withdrawn) The system of claim 26, wherein said contacting mechanism includes a heating element selected from the group consisting of a heated roller, a ceramic heater element, and thermal printhead elements.
29. (withdrawn) The system of claim 26, further comprising a preheater configured for heating at least the reflective metallic layer, said preheater configured to be used prior to the contacting mechanism.

Docket No. 10004809-1
Application No. 10/783,610

25

30. (withdrawn) The system of claim 26, further comprising a dryer configured for drying the image prior to applying heat and pressure.

31. (withdrawn) The system of claim 24, wherein said reflective metallic layer is a metallized thermal transfer overcoat having a protective layer bonded to the outer surface of the metallic layer.

32. (withdrawn) The system of claim 31, wherein said metallic layer comprises a metal selected from the group consisting of aluminum, silver, indium, zinc, chromium, nickel, gallium, cadmium, palladium, molybdenum, gold, copper, rhodium, niobium and composites or alloys thereof.

33. (withdrawn) The system of claim 32, wherein the metallic layer comprises aluminum,

34. (withdrawn) The system of claim 24, wherein the durable printed composite material, once formed, has a thickness of from about 50 μm to about 250 μm .

35. (withdrawn) The system of claim 24, wherein the durable printed composite material, once formed, is flexible.

36. (previously presented) A durable printed composite material, comprising:

a) a printable layer having a viewing surface and a printed surface, wherein an image is printed on the printed surface, said printable layer comprising a transparent or translucent material;

b) a metallic layer having an inner surface and an outer surface, said inner surface of said metallic layer providing a reflective sheen background, said reflective sheen background being visible through at least a portion of said printable layer, and said metallic layer being image-free; and

Docket No. 10004809-1
Application No. 10/783,610

26

c) an adhesive layer adhered between the inner surface and the printed surface such that at least a portion of said metallic layer is visible through the printable layer.

37. (previously presented) The material of claim 36, wherein said metallic layer comprises a reflective metal selected from the group consisting of aluminum, silver, indium, zinc, chromium, nickel, gallium, cadmium, palladium, molybdenum, gold, copper, rhodium, niobium and composites or alloys thereof.

38. (previously presented) The material of claim 37, wherein said metallic layer comprises aluminum.

39. (previously presented) The material of claim 36, wherein said metallic layer further comprises a colorant.

40. (previously presented) The material of claim 36, wherein said metallic layer is a metal foil having a thickness of from about 0.01 μm to about 5 μm .

41. (previously presented) The material of claim 36, wherein the printable layer comprises a member selected from the group consisting of polyesters, cellulose esters, polyamides, polycarbonates, polyimides, polyolefins, polysulfonamides, and composites or mixtures thereof.

42. (previously presented) The material of claim 36, wherein the printable layer is transparent.

43. (previously presented) The material of claim 42, wherein the printable layer is polyethylene terephthalate.

44. (previously presented) The material of claim 36, further comprising a protective layer bonded to the outer surface of the metallic layer.

Docket No. 10004809-1
Application No. 10/783,610

27

45. (previously presented) The material of claim 44, wherein the protective layer comprises a polymer selected from the group consisting of acrylic, epoxy, and mixtures thereof.

46. (previously presented) The material of claim 44, wherein the protective layer has a thickness of from about 0.5 μm to about 100 μm .

47. (previously presented) The material of claim 44, wherein the durable printed composite material has a thickness of from about 50 μm to about 250 μm .

48. (previously presented) The material of claim 36, wherein the durable printed composite material is flexible.

49. (previously presented) The material of claim 1, wherein the printable layer comprises a member selected from the group consisting of polyesters, cellulose esters, polyamides, polycarbonates, polyimides, polyolefins, polysulfonamides, and composites or mixtures thereof.

Docket No. 10004809-1
Application No. 10/783,610

28

IX. EVIDENCE APPENDIX

NONE

Docket No. 10004809-1
Application No. 10/783,610

29

X. RELATED PROCEEDINGS APPENDIX

NONE